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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,896	03/30/2006	Gregory Yelland	671096.404USPC	6246

500 7590 06/02/2010

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EXAMINER	
SZMAL, BRIAN SCOTT	

ART UNIT	PAPER NUMBER
3736	

MAIL DATE	DELIVERY MODE
06/02/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,896	YELLAND ET AL.	
	Examiner	Art Unit	
	Brian Szmal	3736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *01 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14,16 and 18-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14,16 and 18-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07 July 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6, 7, 9, 11-15 and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teicher et al (2004/0002636 A1) in view of Roenker (5,801,810) in view of Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001).

Teicher et al disclose a means for diagnosing akathisia and further disclose presenting a visual test stimulus to the user for a predetermined test stimulus exposure duration; measuring a response form the user, the response providing information about a response time taken for the user to respond; repeating the steps to develop a user profile; calculating for each predetermined test stimulus exposure duration, a representative error rate that represents a proportion of measured responses that are inaccurate; calculating the error rate comprises calculating a mean error for each response (the calculated percentage is a mean error rate); calculating a means response time for each stimulus duration; repetitions of the stimulus exposure are separated by a uniform time interval; one of two or more different stimuli are presented to the user; and each of the test stimuli are presented an equal number of times. See Paragraphs 0022 and 0030.

Teicher et al however fail to disclose masking the test stimulus by placing a mask over or in place of the entire test stimulus; providing information about the user's perception of a characteristic of the test stimulus; comparing the user profile to a reference profile and assessing cognitive impairment or visual impairment of the user; repeating the stimulus exposures for a range of predetermined exposure durations; presenting a focal point stimulus to the user before presenting the visual test stimulus; the predetermined exposure duration is between 10 ms and 300 ms; the user has a choice of two different responses for responding to each test stimulus; and a focal point presentation means for presenting a focal point stimulus to the user.

Roenker discloses a means for testing visual attention capabilities of a subject and further discloses masking the test stimulus by placing a mask over or in place of the entire test stimulus; providing information about the user's perception of a characteristic of the test stimulus; comparing the user profile to a reference profile and assessing cognitive impairment or visual impairment of the user; repeating the stimulus exposures for a range of predetermined exposure durations; presenting a focal point stimulus to the user before presenting the visual test stimulus; the predetermined exposure duration is between 10 ms and 300 ms; the user has a choice of two different responses for responding to each test stimulus; and a focal point presentation means for presenting a focal point stimulus to the user. See Column 4, lines 20-58; and Column 6, lines 20-54.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the means of Teicher et al to include the use of a mask and comparing the acquired results to a reference, as per the teachings of Roenker,

since it would provide a means of controlling the test stimulus exposure to the test subject, to acquire an accurate means of determining the response time. It also would have been obvious to one of ordinary skill in the art to present the test stimuli an equal number of times, since it would provide a means of determining an accurate average response from the application of the test stimuli.

Teicher et al and Roenker however fail to disclose the mask is comprised of an image having at least one filled circle.

Jiang et al disclose a means for applying a mask to a visual stimulus and further disclose the mask is comprised of an image having at least one filled circle. See Introduction, 3rd and 4th paragraphs; and 2.1 Method.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Teicher et al and Roenker to include the use of a mask comprised of at least one filled circle, as per the teachings of Jiang et al, since a filled circle would not have the same contour as the test stimulus and thus prevent a contour interaction between the test stimulus and the mask to provide more accurate results from the test subject.

3. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teicher et al (2004/0002636 A1), Roenker (5,801,810) and Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) as applied to claim 1 above, and further in view of Hongo et al (5,345,944).

Teicher et al, Roenker and Jiang et al, as discussed above, provide a means for measuring responses to a visual stimulus and outputting the measurements, but fail to explicitly disclose an error rate curve chart representing the error rate.

Hongo et al disclose a means for medical diagnosis and further disclose an error rate curve chart representing the error rate. See Figure 11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Teicher et al, Roenker and Jiang et al to include the use of an error rate curve, as per the teachings of Hongo et al, since it would provide an alternative means of outputting the information for expert analysis.

4. Claims 8 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Teicher et al (2004/0002636 A1), Roenker (5,801,810) and Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) as applied to claims 1 and 22 above, and further in view of Harrison et al (6,317,128 B1).

Teicher et al, Roenker and Kiang et al, as discussed above, disclose a means for measuring responses to a visual stimulus and outputting the measurements but fail to explicitly disclose a response rate curve.

Harrison et al disclose a graphical user interface and further disclose the use of a response rate curve. See Figure 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Teicher et al, Roenker and Jiang et al to include the use of a response rate curve, as per the teachings of Harrison et al, since it would provide an alternative means of outputting the information for expert analysis.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Teicher et al (2004/0002636 A1), Roenker (5,801,810) and Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) as applied to claim 1 above, and further in view of Polat et al (6,876,758 B1).

Teicher et al, Roenker and Jiang et al, as discussed above, disclose a means for measuring responses to a visual stimulus and comparing the results to a reference, but fail to disclose the reference profile is generated from data that are selected from the group consisting of data obtained from a reference group comprising cognitively normal individuals and data previously generated by the user.

Polat et al disclose a means for improving a user's visual perception and further disclose the reference profile is generated from data that are selected from the group consisting of data obtained from a reference group comprising cognitively normal individuals and data previously generated by the user. See Column 9, lines 22-30.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Teicher et al, Roenker and Jiang et al to include the use of data obtained from a reference group comprising normal individuals, as per the teachings of Polat et al, since it would provide a means of comparison between the acquired results and results from normal people to determine if the user is suffering from any cognitive impairment.

6. Claims 1, 2, 3, 9-15 and 17-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polat et al (6,876,758 B1) in view of Roenker (5,801,810) in view of Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001).

Polat et al, as discussed above, disclose a means for improving a user's visual perception and further disclose presenting a visual test stimulus to the user for a predetermined test stimulus exposure duration; measuring a response from the user, the response providing information about the user's perception of a characteristic of the stimulus, and a response time taken for the user to respond; repeating the steps to develop a user profile; comparing the user profile to a reference profile; repeating the steps for a range of predetermined test stimulus exposure durations; the repetitions are separated by a uniform time interval; the reference profile is generated from data that are selected from the group consisting of data obtained from a reference group comprising cognitively normal individuals and data previously generated by the user; the user has a choice of two different responses for responding to each test stimulus; one of two or more different test stimuli are presented to the user; each of the test stimuli are presented to the user an equal number of times; and a processing means for processing the response from the user to develop a user profile. See Column 5, lines 3-7 and 21-23; Column 6, lines 1-17; Column 9, lines 22-30; and Column 12, lines 33-57.

Polat et al however fail to disclose masking the test stimulus by placing a mask over or in place of the entire visual test stimulus; presenting a focal point stimulus to the user before presenting the visual test stimulus to the user; the predetermined test stimulus exposure duration is between 10 ms and 300 ms; the mask comprises at least one curved line; and a focal point presentation means for presenting a focal point stimulus to the user.

Roenker, as discussed above, discloses a means for testing visual attention capabilities of a person and further discloses masking the test stimulus by placing a mask over or in place of the entire visual test stimulus; presenting a focal point stimulus to the user before presenting the visual test stimulus to the user; the predetermined test stimulus exposure duration is between 10 ms and 300 ms; the mask comprises at least one curved line; and a focal point presentation means for presenting a focal point stimulus to the user. See Column 4, lines 20-58; and Column 6, lines 20-54.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the means of Polat et al to include the use of a mask, as per the teachings of Roenker, since it would provide a means of controlling the test stimulus exposure to the test subject, to acquire an accurate means of determining the response time.

Polat et al and Roenker however fail to disclose the mask is comprised of an image having at least one filled circle.

Jiang et al disclose a means for applying a mask to a visual stimulus and further disclose the mask is comprised of an image having at least one filled circle. See Introduction, 3rd and 4th paragraphs; and 2.1 Method.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Polat et al and Roenker to include the use of a mask comprised of at least one filled circle, as per the teachings of Jiang et al, since a filled circle would not have the same contour as the test stimulus and thus

prevent a contour interaction between the test stimulus and the mask to provide more accurate results from the test subject.

7. Claims 4, 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Polat et al (6,876,758 B1), Roenker (5,801,810) and Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) as applied to claim 1 above, and further in view of Teicher et al (2004/0002636 A1).

Polat et al, Roenker and Jiang et al, as discussed above, disclose a means for assessing impairment of a user, but fail to disclose calculating for each stimulus exposure duration an error rate that represents a proportion of responses which are inaccurate; the error rate comprises calculating a mean error (the calculated percentage represents a mean error); and calculating a mean response time.

Teicher et al, as discussed above, disclose a means for diagnosing akathisia and further disclose calculating for each stimulus exposure duration an error rate that represents a proportion of responses which are inaccurate; the error rate comprises calculating a mean error (the calculated percentage represents a mean error); and calculating a mean response time. See Paragraphs 0022 and 0030.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Polat et al, Roenker and Jiang et al to include the calculation of a mean error rate, and a mean response time, as per the teachings of Teicher et al, since it would provide a means of determining the average error rate and response time for a plurality of test stimuli, to help diagnose visual or cognitive problems.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polat et al (6,876,758 B1), Roenker (5,801,810) and Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) as applied to claim 1 above, and further in view of Hongo et al (5,345,944).

Polat et al, Roenker and Jiang et al, as discussed above, disclose a means for assessing impairment of a user and providing an output, but fail to disclose an error rate curve.

Hongo et al, as discussed above, disclose a means for medical diagnosis and further disclose an error rate curve. See Figure 11.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Polat et al, Roenker and Jiang et al to include the use of an error rate curve, as per the teachings of Hongo et al, since it would provide an alternative means of outputting the acquired information regarding the error rate to an expert for analysis.

9. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polat et al (6,876,758 B1), Roenker (5,801,810), Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) and Teicher et al (2004/0002636 A1) as applied to claim 7 above, and further in view of Harrison et al (6,317,128 B1).

Polat et al, Roenker, Jiang et al and Teicher et al, as discussed above, disclose a means for testing a user to provide a medical diagnosis but fail to disclose a response rate curve.

Harrison et al, as discussed above, disclose a graphical user interface and further disclose a response rate curve. See Figure 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Polat et al, Roenker, Jiang et al and Teicher et al to include the use of a response rate curve, as per the teachings of Harrison et al, since it would provide an alternative means of outputting the acquired information regarding the response rate to an expert for analysis.

10. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Polat et al (6,876,758 B1), Roenker (5,801,810) and Jiang et al (The Spatial Gradient of Visual Masking by Object Substitution, 2001) as applied to claim 1, 18 or 20 above, and further in view of Harrison et al (6,317,128 B1).

Polat et al, Roenker and Jiang et al, as discussed above, disclose a means for testing a user to provide a medical diagnosis but fail to disclose a response rate curve.

Harrison et al, as discussed above, disclose a graphical user interface and further disclose a response rate curve. See Figure 12.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Polat et al, Roenker and Jiang et al to include the use of a response curve, as per the teachings of Harrison et al, since it would provide an alternative means of outputting the acquired information regarding the response to an expert for analysis.

Response to Arguments

11. Applicant's arguments filed March 1, 2010 have been fully considered but they are not persuasive.

The Applicants argue the combination of Teicher et al, Roenker and Jiang et al fail to teach the claimed method of assessing cognitive impairment. The Applicants first argue Jiang et al fail to teach a mask image having at least one filled circle, and the mask is placed over or in place of the entire visual stimulus. The Examiner would like to respectfully point out the Examiner's use of the prior art of Roenker, wherein Roenker teaches the placement of a mask over or in place of the entire visual stimulus. Figure 7 in Roenker however only shows the use of a mask with a plurality of wavy lines. Jiang et al disclose the use of four dots in a mask. The Examiner is using the four-dot mask of Jiang et al to replace the wavy lines in Roenker's mask. The Applicants further argue the specifics of the four-dot mask of Jiang et al, including the shape of the pixels and the dots are not circular due to the square shape of the pixels. The Examiner agrees with the Applicants' assertion that pixels are square and not round. However, one of ordinary skill in the art would know that there are no true circles in computer graphics using CRT or LCD monitors. All circles on a computer screen are square in nature, but the human eye perceives the shape to be circular due to the size and distance of the computer screen to the observer's eye. In the instance of the four-dot mask of Jiang et al, the observer is placed 57 cm (22.4 in.) from the screen during the test. At that distance, a square "dot" can be easily perceived to be a circular dot.

The Applicants then argue the prior art of Roenker teaches a perception test and not a cognitive test. The current claims are drawn towards the ability to assess the

cognitive impairment of a user using information acquired from the user's response including the user's perception of a visual test stimulus. While the Examiner understands the difference of perception and cognition in psychology, the current claim language does not clearly differentiate the assessment is based on a cognitive test only, since the method relies upon the measurement of a response from a user, the response providing information about the user's perception of a characteristic of a visual test stimulus. Roenker discloses the use of a visual test stimulus and measuring a response from the user, wherein the response provides information about the user's perception of the visual test stimulus. Furthermore, it is widely recognized in the art that perception tests can include cognitive performance in executing the perceptual test, as evidenced by Calhoun et al (2003/0059759 A1) in Paragraph 0052.

The Applicants then argue the combination of Teicher et al, Roenker, Jiang et al and Hongo et al fail to teach the claimed limitation of Claim 5. Claim 5 currently discloses "an error rate curve charting the representative error rate relative to the pre-determined test stimulus exposure duration". The Applicants argue using the teachings of Hongo et al, wherein the graph shows the rate of correct responses to determine the error rate would provide an inaccurate assessment. The Examiner respectfully disagrees. The current claim language does not disclose the basis for the error rate. The claim does not disclose the error rate is only based on "actual incorrect responses" and not other responses or non-responses that could be construed as an incorrect response.

The Applicants then state Claims 8, 10 and 25 are allowable based on the allowability of Claim 1 over the current prior art of Teicher et al, Roenker and Jiang et al. Based on the above response to the Applicants' arguments regarding Claim 1, the rejections are being maintained.

The Applicants then argue the rejection of Claim 1-3, 9-15 and 17-24 under Polat et al, Roenker and Jiang et al. The Applicants provide the same arguments with respect to the prior art of Jiang et al and Roenker. Therefore, the Examiner's response to the Applicants' arguments can be seen above.

The Applicants then argue the rejection of Claim 7. In particular, the Applicants argue the Examiner's interpretation of the current claim language. The current claim language currently reads as: "calculating, for each pre-determined test stimulus exposure duration, a mean response time". One of ordinary skill in the art can reasonably interpret the current claim language as calculating a mean response time for a single test stimulus out of the number of predetermined test stimulus exposure durations. However, the Applicants argue the current claim language reads on "a mean response time is calculated for responses provided for each of a plurality of pre-determined test stimulus exposure durations". Based on the Applicants arguments, Claim 7 should read as "calculating, for the range of pre-determined test stimulus exposure durations, a mean response time". The Applicants also argue the calculation of a mean response time for a single stimulus, based on the total number of inputs, is not the same as calculating a mean response time for each of the predetermined test stimulus exposure durations. The Examiner respectfully disagrees. The calculation of a

mean response time is the same, regardless of the number of exposure durations for a single test stimulus or a plurality of test stimuli. Calculating a mean response time would entail gathering the total number of responses and averaging them. Therefore Teicher et al does disclose the claimed limitation of Claim 7.

The Applicants then state Claims 5, 8 and 25 are allowable based on the allowability of Claim 1 over the current prior art of Polat et al, Roenker and Jiang et al. Based on the above response to the Applicants' arguments regarding Claim 1, the rejections are being maintained.

Conclusion

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Szmal whose telephone number is (571)272-4733. The examiner can normally be reached on Monday-Friday, with second Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Max Hindenburg can be reached on (571) 272-4726. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Szmal/
Examiner, Art Unit 3736

/Max Hindenburg/
Supervisory Patent Examiner, Art Unit 3736